

AMENDMENTS TO THE CLAIMS

1-64. (Cancelled)

65. (New) A microRNA oligonucleotide comprising:

a microRNA nucleotide sequence having a length which is at least 21 nucleotides long and is not longer than 23 nucleotides long;

said microRNA nucleotide sequence forming part of a microRNA precursor nucleotide sequence, having a length which is greater than 60 nucleotides, said microRNA precursor nucleotide sequence being further characterized in that:

said microRNA precursor nucleotide sequence forms a hairpin structure,

said hairpin structure, has an energy lower than -25 Kcal/mole, as predicted by a use of an MFOLD algorithm version 3.7x with default parameters,

said microRNA precursor nucleotide sequence forms part of a polynucleotide sequence forming part of the human genome, said polynucleotide sequence having a plurality of different base pair arrangements which are predictable by a use of said MFOLD algorithm, most of said arrangements including said hairpin structure,

at least 70% of nucleotides of a 5' arm of said hairpin structure and of a 3' arm of said hairpin structure are base paired,

said microRNA precursor nucleotide sequence includes at least 19% Adenosine nucleotides, at least 16% Cytosine nucleotides, at least 23% Thymine nucleotides and at least 19% Guanine nucleotides, and

Shanon Entropy of a single nucleotide distribution in any 10 nucleotide long portion of said microRNA precursor nucleotide sequence is at least 0.7 bits;

said microRNA nucleotide sequence being further characterized in that:

a number of base paired nucleotides located between said microRNA nucleotide sequence and a loop of said hairpin structure is greater than 1 and smaller than 7,

a number of base paired nucleotides comprised in said microRNA nucleotide sequence is greater than 14,

with respect to a microRNA complement nucleotide sequence, which is a nucleotide sequence comprised in said microRNA precursor nucleotide sequence, is located opposite said microRNA nucleotide sequence on said hairpin structure and is partially reverse complementary to said microRNA nucleotide sequence, an absolute value of a difference between the number of unpaired nucleotides in said microRNA nucleotide sequence and the number of unpaired nucleotides in said microRNA complement nucleotide sequence is smaller than 3; and

said microRNA nucleotide sequence constitutes less than 0.1% of size fractionated RNA expressed in human HeLa cells, which size fractionated RNA is approximately 20 nucleotides in length.

66. (New) A microRNA oligonucleotide according to claim 65 and wherein said microRNA precursor sequence excludes oligonucleotides consisting solely of nucleotide sequences selected from the group consisting of accession numbers MI0000073- MI0000091, MI0000263-MI0000266, MI0000437, MI0000466-MI0000468 and MI0000651.

67. A microRNA oligonucleotide according to claim 65 and wherein said microRNA oligonucleotide is not expressed in human HeLa cells.

68. A microRNA oligonucleotide according to claim 65 and wherein said microRNA oligonucleotide does not have a mouse homolog.